KNOWLEDGE

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OFFICIAL S Y INFORMATION OF THE U.S. ARMY

WATER WISE

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

FROM THE DASAF
RISK: A COMMON DENOMINATOR

Anyone who has ever had a college philosophy class is familiar with the question, "If a tree falls in a forest and no one is around to hear it, does it make a sound?" Multiple interpretations of the answer have been given by great minds through the years, but one simple premise is this: The lion's share of human perception is made up of only what we actually observe. Trees fall in the forest all the time, but it's not an "event" unless someone is there to see or hear it.

Unfortunately, that's the way a lot of people — leaders and Soldiers included — think about risky behavior. If they don't see it right in front of them, it must not be happening. With the most indisciplined Soldiers, there generally are some indicators of risk in their performance on duty. Reaching them isn't necessarily easy, but leaders are at least aware of the problem and can address it. They make the noise, so to speak, and therefore get needed attention.

However, those Soldiers who don't fall into the traditional indisciplined category but still take occasional risks are the unheard trees in the forest. If a Soldier executes every mission to standard on duty but dies in a preventable accident after hours, his or her leaders might understandably be shocked. Since they'd never seen the Soldier make an infraction, they assumed risky behavior wasn't an issue.

I started thinking about this during a distracted driving event the USACR/Safety Center recently sponsored at Fort Rucker. Soldier and civilian volunteers rotated through a controlled course where they encountered unexpected obstacles while driving with some distraction, ranging from talking on their cellphones to switching a CD to dealing with loud passengers inside the vehicle. Most were surprised at just how much a simple distraction affects their reaction time, a realization that often doesn't come about until an accident or near miss occurs. Fortunately, our participants learned that lesson traveling at 10 and 15 mph, a much more forgiving situation than real life allows.

This exercise clearly showed commonplace, well-ingrained behaviors are indeed risky — and the scary thing is we all needlessly accept that risk from time to time. Who hasn't checked their phone when a message alert comes through? Even if you don't reply, you're still distracted by reading the message. Have you visited a drive-through for a quick meal on a long road trip, eating while making ground? If we're doing it, you know your Soldiers are as well, even the best and brightest in your ranks.

Risk is pervasive, and we'll never completely eliminate it from our everyday lives. We can manage it, however, and teach our Soldiers to make smart risk decisions. Accidents sometimes happen that are out of our control, but no one has to be a casualty of personal negligence. Training, discipline and standards will serve us and our Soldiers well if we follow through and ensure they do too, particularly when no one is looking.

Thank you all for what you do every day, and I wish each of you a safe and happy Independence Day. Every birthday America celebrates is a tribute to our men and women in uniform and those working behind the scenes to keep them safe. Please let me know how I can help in your endeavors, and be sure to check https://safety.army.mil regularly for the latest safety information and risk management tools. A distracted driving awareness package, "So you think you can drive … distracted?," based on the Fort Rucker event, was just added to the site and contains materials to help you start the conversation with your Soldiers.

Today and every day … stay safe and think smart!

Army Safe is Army Strong!

TIMOTHY J. EDENS
Brigadier General, USA
Director of Army Safety

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WATER WISE

ALLEN MOORE
Installation Safety Office
U.S. Army Garrison Fort Hunter Liggett, Calif.

One beautiful morning, my family joined some friends for a boat ride on Lake Nacimiento on the central coast of California. The water was cold, so we had no plans to go swimming. We just wanted to spend some time on the beautiful lake.

My wife, father and I arrived at the lake about 8 a.m. and met two of our friends at the launch ramp. We put the boat in the water and loaded up with no issues. I noticed there wasn't a single personal flotation device in sight, but didn't mention it. Little did I know that my silence would almost lead to tragedy.

As we got out on the water, there were only two other boats on the lake. We cruised around at a nice, leisurely pace, enjoying the scenery and fresh air. As we entered an area the locals call the "narrows," one of our friends handed out beers. Everyone accepted, including my father, who was 68 years old at the time.

After a couple of beers, nature called, so we decided to make a pit stop. The only way off the boat was to walk along the rail to the bow (front). I was the first one off, and one of my friends followed. As we relieved ourselves, my father decided he needed to get off the boat too. My wife and our other friend were in the cabin preparing snacks and didn't realize my father was attempting to get off the boat.

As my father got onto the rail, he lost his balance and fell into the water. My wife heard the splash and came running out of the cabin. Initially, she didn't see anything, but as she looked around the boat, she saw my father underwater, looking up at her! She jumped in and brought him to the surface. My friend and I rushed back and helped them out of the water. They were both blue from the frigid water, so we warmed them up with blankets and put a sweatshirt on my father. We decided we'd better cut the trip short and head home for some dry clothes and hot coffee.

The ride back to the launch ramp was quiet as everyone reflected on what had just happened. My wife broke the silence by asking my father why he didn't swim to shore. His answer surprised us all. He said, "I didn't swim to shore because I don't know how to swim." The boat went silent again. I never knew my father couldn't swim.

My father had lived with us for the past 10 years because of health issues. He was very thin, but his lung cancer was in remission. He was happy and feeling good at this time in his life. I often reflect on how I almost lost him and my wife that fateful day.

My father finally succumbed to lung cancer at the age of 79. I hate to think what those final 11 years would have been like without him or my wife in my life. What might have happened if my father had panicked? If we hadn't been drinking, this close call probably would've never happened.

Please don't find yourself in a similar situation. It was bad enough we'd been drinking, but not wearing a PFD was inexcusable. For the safety of everyone on the boat, leave the alcohol on the shore and ensure PFDs of the proper classification are available for each passenger. Know who can and can't swim, and don't allow anyone on the boat who's not willing to abide by the rules. By being water wise, you can help prevent a fun day on the lake from ending in disaster.

FYI

According to the U.S. Coast Guard, in 2011, 533 of the 758 boating fatalities resulted from drowning, with 84 percent of the victims reported as not wearing a life jacket. The USCG urges recreational boaters to make sure everyone on board wears a life jacket at all times on the water. To learn more about boating safety, visit http://www.uscgboating.org/.

"Lost on the Lake" is a public service announcement from the USCG that shares a family's heartache as they mourn the loss of loved ones who were boating and not wearing life jackets. To view or download the video, visit

https://safety.army.mil/multimedia/VIDEOLIBRARY/VideoPlayer/TabId/421/VideoId/674/Lost-On-The-Lake.aspx.

BLINK OF AN EYE

CHIEF WARRANT OFFICER 4 MARK PARR
Driving Directorate
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Fort Rucker, Ala.

In a blink of an eye, the motorcycle was on its side and I was hitting the pavement. There was no life flashing before my eyes and no chance to recover, but there was pain in my left knee and elbow. One second I'm on the bike and the next I'm on the ground next to it. A little shaken and quite embarrassed, I sat there for a minute rattling my brain, trying to think what I could have done wrong. The Motorcycle Safety Foundation RiderCoach then walked over and asked, "What happened?" I honestly had no idea.

This accident, while real, occurred during the two-day MSF Basic RiderCourse, which is required by the Army for all Soldiers who want to ride a motorcycle. It's a controlled environment where novice and experienced Soldier riders must go before riding a motorcycle. The course is part of the Progressive Motorcycle Program and is designed to teach the basic skills of riding, as well as ensure you understand the inherent risks associated with a motorcycle.

This was a beta test version of a program currently being developed by the MSF in conjunction with the Army. It starts with an online course designed to introduce inexperienced riders to the basics, including the different types of motorcycles on the road, the location of controls, proper riding gear and how to handle the bike under various road and traffic conditions.

Passing the online segment almost dissuaded me from taking the hands-on portion. Realizing the amount of focus needed to control the bike safely was a little intimidating. Throttle with the right hand, clutch with the left hand, brake with the right foot and hand, and shift gears with the left foot. Oh, and don't forget lane position, braking distance, turn set-up and the fact that you never know if the driver of the car next to you is aware you're there!

However, I made it through the course and felt I was ready to learn how to ride. I didn't have any plans of buying a bike just yet, but I wanted to see what all was involved. I arrived at the class and after about 10 minutes of introductions to the course and a quick review of what we had learned in the online portion, it was time to get on the bike. A little surprised at how quickly we were tackling the bikes, I realized this was the hands-on portion of the course, so I grabbed a helmet and gloves and headed out to the range.

After the rest of the students and I each found a motorcycle that fit us well, we went over some basics of the bike, such as location of the ignition switch, fuel switch, clutch, gearshift and brakes. As the class progressed, I began to feel a few butterflies in my stomach and realized we were going to be riding very soon.

As the trainers, who are referred to as RiderCoaches, talked us through the exercise we were about to perform, the nervousness changed to excitement. When I turned the key and flipped the switch for the ignition and the bike roared to life, I began to understand why so many bikers enjoy riding. Unlike a car, where the engine is in front of you, a rider practically sits on the engine of a motorcycle, and that rumble translates into power. The thought that I could control that power and make it do what I wanted further fueled my excitement.

The first few exercises were simple, designed for the rider to understand the relationship between the clutch and the engine. We "power walked" our bikes, making sure to never fully engage the gear but learned where the "friction zone" was on the clutch. The friction zone is that magical place where the gear engages and the bike begins to move forward under power from the throttle. We were also instructed that if the bike feels like it is getting out of control, squeeze the clutch. This will disengage the power to the rear wheel and begin to slow you down. So, I kept thinking, "Clutch equals no power." But what about the brakes? Won't they stop me?

After 25 years of driving various sizes of cars and trucks with manual and automatic transmissions, I feel comfortable with braking. However, when you brake on a motorcycle, you have to remember there is a front brake and back brake, just like most bicycles nowadays. The two should be worked together to brake in the safest manner. Applying just one can be dangerous … I repeat, d-a-n-g-e-r-o-u-s.

After several exercises and a few hours, we were ready for our first opportunity to change gears while riding. This entailed driving down the long side of the course, changing gears and then slowing slightly to make the turn into the short side of the course, then making another turn to the opposite long side of the course, changing gears again, and then slowing into the second short end of the course. Basically, we were doing laps. I started out well enough, accelerating and changing gears. I approached the turn, backed off the throttle and then looked ahead in the turn to where I wanted to go, just as I was taught. I continued to do this for a few laps and realized I wanted to go a little faster and work on changing gears a little more. As I came out of the turn for the long, straight stretch, I rolled on the throttle, picked up speed, changed gears and accelerated a little more. That's when it happened.

I realized the extra speed had carried me to my destination — the next turn — a little too quickly, and I hadn't downshifted yet. I wasn't going to make the turn at my current speed. So, did I grab the clutch and remove power from my rear wheel like I was taught? Nope. Did I ease in on the front and rear brakes at the same time to control my speed and slow down gradually but with control like I had learned? Nope. I did exactly what I would have done in that situation if I were in a car — I hit the brake. In fact, I grabbed the front brake and only the front brake. I grabbed it hard too. When I did, the power in the back wheel kept pushing while the front wheel stopped. I ended up on the ground with the bike beside me, my shirt and pants torn and my elbow and knee hurting. Yeah, I was only going between 10 and 15 mph, but I still ended up with road rash on my elbow and knee.

The RiderCoach came over and asked how I was and if I knew what happened. When I told him I wasn't sure, his experience and observation pinpointed exactly what I had done wrong. I took a breather and began to analyze what had happened. As Soldiers, it's instinctive for us to perform a quick after-action review to learn how we can do things better in the future. I concluded motorcycle riding was not for me.

Later, I thought about what I had experienced. First, my injuries — road rash from going just 10 to 15 mph. I never imagined. Yes, it hurts. I now know why the Army requires Soldiers to follow ATGATT — All the Gear, All the Time. Helmets, gloves, eye protection, sturdy over-the-ankle footwear, long-sleeved shirts and pants will help with surviving the crash. However, your goal should be to do more than survive. You should want to walk away from a crash thinking the gear saved you from any injuries. Invest in riding jackets and pants made to save your skin … literally.

Then I thought about training. What if this course didn't exist and one of my buddies had convinced me to ride his bike? I could have ended up dead or seriously injured. The Army leadership provides the course free of charge to all Soldiers. This is why the course is required. Get the training before you start riding. Find out if you really want to ride before you invest thousands of dollars into a bike and equipment. It could also save you on medical expenses.

Finally, if you take the course and decide riding is for you, make sure you go back and take follow-up courses through the Progressive Motorcycle Program. You will learn more about riding safely and maybe even be reminded of some things you forgot from the basic course. Learning these lessons on the road in real traffic can lead to an epic failure. Don't want to take my advice? Don't worry; it will all be over in a blink of an eye.

Did You Know?
The Motorcycle Safety Foundation recently updated its introductory training course — the Basic RiderCourse — with new classroom content focused on rider behavior, risk awareness and risk management. Field testing of the new program has been conducted at a West Virginia Army National Guard facility and Fort Rucker. The MSF hopes to release the course nationwide this summer.

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TRUST YOUR SYSTEMS

NAME WITHHELD BY REQUEST

When I arrived in Iraq, I was a new pilot out of flight school, chomping at the bit to contribute to the mission. After a week or so of right-seat rides, our unit was in full swing, supporting troop transport missions with our UH-60As. My second mission in country was to execute a six-hour mission in and around Baghdad. The temperature was typical for August, about 110-115 F.

My pilot in command and I ground taxied on alpha taxiway and prepared our health indicator test. After the HIT, we lifted to a 10-foot hover and noted our hover power. Everything was normal, and we set up to the northwest with clearance for a direct right turn out to cross the runway.

As we started our right-hand turn, I noted we were immediately in the midrange of our 30-minute turbine gas temperature limit. I thought it was unusual since we weren't heavy but attributed it to the hot climate and lack of experience of flying in country. The TGT eventually fell to a more acceptable range, dropping in and out of the 30-minute limit as we climbed to our cruise altitude even though we were 10 knots slower than originally planned.

When we arrived in Baghdad, we were calculating our TGT issue. As we transitioned across Baghdad International Airport, we were required to hold short of the runway. We noticed we were now hovering in the middle of our 30-minute TGT range, even though our torque was exactly what our performance planning card had predicted.

Our trail aircraft had a maintenance test pilot, so we explained our issue as we cross-checked the central display unit and pilot's display unit. He left the decision up to us as to whether we could continue to fly, so we chose to go on with the mission. We arrived at the forward arming and refueling point and took on a full load of gas. The FARP was adjacent to the runway with two fuel trucks directly in front of it.

As we climbed cautiously out of the FARP, we immediately started to lose rotor RPM. We were committed since we were directly over the fuel trucks, but it was at this point we received a low rotor RPM audio. The PC nosed the aircraft over to try to get some airspeed and quickly we got our RPM back to 100 percent, but we were barely complying with our hold-short-of-the-runway instructions. We ground taxied into the parking area, shut down and opened the engine cowlings to see if anything unusual was contributing to our TGT issue. We didn't see anything obvious, so we decided to continue on with our mission, even though we now knew we had an issue with our TGT being high enough that we were getting into TGT limiting, thereby reducing our power margin.

For the rest of the day, we continued gingerly managing our TGT, taking very low takeoff angles to keep up our rotor RPM. As we would get to straight-and-level flight, the TGT would fall back into the lower end of the 30-minute limit. In one landing zone, we even made a modified roll-on landing and then repositioned to the pad that would give us the best chance for a rolling takeoff, all the while carefully bringing in power to clear obstacles. Upon returning to home station, we found something on the postflight that was the contributor to our TGT issues. The bleed air hose that fed the No. 1 engine had managed to separate from the engine.

I learned a number of things that day. First, trust your systems knowledge. We knew the whole day that our indications were not normal, yet we decided to continue. We didn't want to be the guys to impede a mission because we couldn't handle an "irregularity." Second, even though we were new to country, we learned that a power margin that small was not normal given the weights all day. Third, and most importantly, we were lucky not to get into a serious situation based on our aircraft performance. It could have been catastrophic if we had to use an evasive maneuver or more power than we needed for basic approaches and takeoffs. That day taught me that your system knowledge, along with applying good decision-making, will help you and your crew arrive safely.

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FORMULA FOR DISASTER

MAJ. JOHN STRAIN II
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Of the lessons learned during our brigade's yearlong rotation in support of Operation Iraqi Freedom III, none have returned to me more than the words "complacency kills." That warning was emblazoned on a T-barrier in the center of Forward Operating Base Saint Michael as a daily caveat to our greatest planning measures, pre-combat checks and pre-combat inspections.

The complacency kills sign served as a somber reminder of those Soldiers who'd been seriously injured and killed as a result of an accident or combat. The message was a warning to wake up and follow our standard operating procedures. Regardless of the losses, however, the warnings became increasingly faint until the next week, when the lesson was applied once again.

Overconfidence was more predictable. Its presence was marked by the rotation of every new unit that showed up. An air of superiority exuded from officers and noncommissioned officers that they were above the situation and would set a new standard without adherence to lessons learned by the unit they replaced. This overconfidence was met by an enemy that changed its tactics, techniques and procedures more often than we did, as if they read our playbook prior to every period.

Unfortunately, complacency and overconfidence are even more prevalent at home than in theater. We see it in the number of off-duty accidents, as compared to those at work, as well as in under-reporting. Both are signs of a complacent and overconfident Soldier. We are paying a high cost in injuries, quality of life and senseless deaths due to our inability to apply combat lessons to the home front.

Several years ago as a leader in a chemical, biological, radiological and nuclear unit, I received a call from two team members. They were frantic after being exposed to a live agent while working in a confined area. Without personal protective equipment, both were concerned about the immediate and long-term effects of this lethal substance. They were evaluated, treated and released, as there was no immediate effect. The tragedy lies in the fact that there was never an accident report on this incident. It was stifled at the command level due to fear of the repercussions. No evaluation was made to identify the complacent measures and overconfident attitude that allowed loose bottles of the substance to remain unsecured or permitted Soldiers to work in a confined and unventilated area without the required personal protective equipment. No reporting, no lessons learned and no improvements made.

I'm a firm believer that the only way for us to conduct operations in an acceptable risk environment is when Soldiers properly perform PCCs, leaders thoroughly conduct PCIs and commands report and investigate even the most benign violation of safety standards. "It can't happen to me," "We are special," and, "We don't need PPE," are the same fallacies that are killing our Soldiers off and on duty. "Stay alert, stay alive" could not be more applicable than today. Soldiers are human, and we make mistakes. If we don't learn from these mistakes, we will pay with our life and the lives of our comrades.

FYI

The USACR/Safety Center has a reference guide intended to assist safety professionals in advising their commands in preparing and maintaining accident prevention programs before, during and after deployment. The Deployment Guide for Brigade Combat Team Safety Professionals covers a myriad of common hazards, potential controls, TTPs and lessons learned for topics such as base operations, ammunition and explosives storage and handling, vehicle and convoy operations and weapons handling. The guide also offers links to briefings, checklists, sample standard operating procedures and risk management worksheets, relevant publications, posters, videos, websites and toolboxes. Much of the content comes from previously deployed safety professionals. Check it out today by visiting https://safety.army.mil/deploymentguide (AKO login required).

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A NEW PERSPECTIVE

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Just about everybody has seen accident videos that warn, "It could happen to you." Fortunately, most folks haven't experienced the loss of a friend or loved one to an automobile accident. I wish I were one of them.

A single event shaped my habits for the rest of my life and gave me a perspective and appreciation I didn't have prior. At the time, it seemed insignificant. The next day, however, after I heard all the details and had time to reflect, it had a huge impact on me.

As I rushed into the emergency room with my pregnant wife, who was having some serious contractions, I ran into a friend I hadn't seen in about four months. He was sitting in a wheelchair. I quickly asked if he was OK as we hurried by. He told me he'd been in a car accident, but didn't elaborate. Rather, he just gave a small smile and congratulated me on the upcoming birth of my child. I was totally consumed with the events surrounding me, and shortly thereafter, was once again the father of a little girl. At that point, I didn't realize that as I celebrated this new addition to our brood, my friend's family had just been taken away.

His name is Adai (pronounced ah-day), and he was from Haiti. We'd been friends for more than a year. He was working hard to become a U.S. citizen, and joining the Navy was his path to citizenship. He was a proud father and husband.

When I met him, Adai's family was still living in Haiti, but every dollar he earned went to them or to savings to help get them to America. He'd started as a deckhand, but what he really wanted to be was a Navy corpsman (medic). He befriended the ship's corpsman and would volunteer to help him in his spare time. Months later, after hundreds of hours volunteering, Adai put in paperwork, with a recommendation from the ship's corpsman, to change his job classification. Two or three months later, he was approved to attend school to become a corpsman.

Everything for this hardworking man in his mid-20s was finally lining up. While in school, he received permission for his family to move to the U.S. He also took his citizenship test and became a citizen. He was fulfilling his dream and it seemed as if nothing could stop him.

Immediately after graduating from corpsman school, Adai, his seven-months-pregnant wife and 7-year-old daughter got into their vehicle for the 14-hour drive home. Adai preferred to drive after dark when there was less traffic on the road, and they traveled eight hours through the night before checking in at a hotel. The next night, they resumed their trip. Unfortunately, about an hour away from their destination, a car crossed the median and struck them head on. In an instant, a drunk driver took the lives of Adai's daughter, his wife of almost nine years and their unborn child.

To this day, I think about that moment I saw Adai in the hospital. I, consumed with happiness over the impending birth of my daughter, never considered what was going on in the lives of the people around me. Then there was Adai, who was struggling with the loss of his family. He had to have been full of questions. "Why did this happen to me? What will I do?" Still, through all of that, he forced a smile and congratulated me on my moment of happiness.

Adai deserved so much more, but a bad decision by a man on his way home from a bar changed everything. This accident was completely preventable. That driver should never have been on the road.

More than 15 years later, I find myself still asking questions. I, too, wonder why this happened to Adai. I also wondered why the drunk driver lived but my friend's family died. Sadly, I know Adai will never get the answers to those questions.

That day in the emergency room changed my life. I soon began training on the hazards of drinking and driving. I stopped being an enabler and started offering to be a designated driver. No one should have to lose a friend or loved one to a preventable accident. Take care of them and help them take care of others.

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TRAIN FOR THE WORST, HOPE FOR THE BEST

CHIEF WARRANT OFFICER 2 GABRIEL APODACA
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While stationed in Germany, I received a call from a platoon sergeant who needed my help. A platoon leader at the motor pool needed assistance conducting aircraft fire suppression classes for Soldiers who refuel and rearm helicopters. I researched the planned classes and found the data surprising. It indicated that fires may engulf helicopter crews in anywhere from 18 seconds to two minutes. Needless to say, after this training, I had a new appreciation for the danger fire presents to aviators.

The platoon leader integrated the fire department that handles crash and rescue service at our airfield so they could help with emergency egress training for downed aviators. They were also able to gather fire extinguishers that needed to be discharged, and the fire crew had an aircraft that was used for aviator egress training.

After coordinating with the airfield manager and putting in a notice to airmen since our section of the taxiway was to be closed for the training, we arranged for an AH-64D to be part of the training. We gathered and tested radios to ensure we could talk with the tower and sufficient personal protective equipment was collected. Some junior aviators were called out of the office to participate in full flight gear as casualties. Inside our briefing theater, the troops were given classes on fire safety, fire extinguishers and aircraft familiarization. Combat lifesaver refresher classes were also given on how to evaluate a casualty and provide immediate care.

The Soldiers were moved out to the flightline for the rest of the training. The groups were split, and each smaller group went through a training scenario. All training started in the crawl stages, and aviators showed each Soldier the danger areas on a combat-loaded helicopter. They were also shown egress points on the helicopter and how to get the pilots out if those points were blocked. Small groups of Soldiers were then given the opportunity to pull out a real pilot from the helicopter. Eventually, the groups turned it into a game to see who could get the pilots out the quickest. The fire department also gave hands-on familiarization of the fire extinguishers and demonstrated how to discharge one.

After everybody was trained at the base level, the fun started. Each Soldier donned PPE, and the fire department ignited JP8 fuel. With dummies in the "burning" trainer, the emergency response plan was initiated. The tower called the fire department, medics, military police and chain of command. The fire truck came screaming down the flightline and put out the fire with a truck-mounted cannon as the firefighters rescued the dummy aviators from the aircraft. Then, they performed immediate combat lifesaving measures on the victims and removed them on stretchers. After the firefighters were finished, the rest of the time was spent training the groups on how to do the same thing.

The pre-accident plan was tested, and aviators were able to teach and learn from the Soldiers. The Soldiers who refuel and rearm our aircraft appreciated that aviators cared enough to meet and train with them, instead of only seeing them when they needed fuel. The fire department was able to conduct training with real aircraft, and it was all done safely.

It's good to know we have personnel trained for emergencies. Hopefully, though, we won't ever need to use that training.

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BEAT THE HEAT

KYLE RUSSELL
Defense Contract Management Agency
Fort Lee, Va.

Summer is a beautiful time of year; however, we should always be aware of the associated dangers lurking around the corner.

Heat exhaustion, heat cramps and heat rash are serious conditions and are the body's way of signaling you are overheating. The human brain actually begins to die when the body's core temperature is not kept at equilibrium. Every year, thousands of people die from heat-related illnesses/injuries. But here's what astonishes me: Almost all heat illnesses/injuries are preventable. Folks just need to prepare for the elements and do thorough prior planning before engaging in activities in hot weather.

Heat exhaustion is a heat-related illness/injury that most often develops after several days of exposure to high temperatures and inadequate or unbalanced fluid replacement. Those most prone to heat exhaustion are the elderly, people with high blood pressure and individuals working or exercising in a hot environment.

Heat exhaustion symptoms include heavy sweating, pale skin, muscle cramps, weakness, dizziness, nausea or vomiting and fainting. When someone is suffering from heat exhaustion, the skin often will be cool and moist or clammy. A high pulse rate and fast, shallow breathing are also cues. In extreme cases, the skin will be warm and dry. When this happens, the individual is at risk for heat stroke.

Staying hydrated is the most important thing a person can do to avoid the dangers of the sweltering summer sun. Both in Alabama, where it is humid, and Arizona, where it is dry, hot air and the sun will suck moisture right from your body. The skin is the body's largest organ, and it's in the most danger from the sun's powerful rays. Sunscreen will protect your skin from the damaging ultraviolet exposures, and sunglasses will protect your vision.

Do not take the summer lightly. It is important that during these nice, sunny days you remember how easy it is to become dehydrated. If you are thirsty, get something to drink. Don't forget to protect yourself from the heat, and always prepare before setting out for a day outdoors.

Know the Signs
The U.S. Army Combat Readiness/Safety Center's summer safety campaign is in full swing through Sept. 3. Have you seen the resources designed to compliment your organization's campaign? Check out this article about keeping cool in hot weather, https://safety.army.mil/LinkClick.aspx?fileticket=BHLgyRvn_YE%3d&tabid=2409.
For more safety campaign information, visit
https://safety.army.mil/multimedia/CAMPAIGNSINITIATIVES/KnowtheSigns/tabid/2369/Default.aspx.

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SHADE-TREE MECHANIC

COMPILED BY THE KNOWLEDGE STAFF

For one reason or another, most of us have probably been a "shade-tree" mechanic at some point in our lives. For me, the first time was my during my freshman year in college, when the water pump failed on my 1958 Chevy. With limited funds, I had no choice but to dive in with nothing more than a friend's advice and a set of cheap flea market tools.

Over the past 23 years, I have acquired a three-car garage, two rolling toolboxes and a nurse for a wife — all to support my mechanical habit. When I look back at all the cars I've gone through, I realize each one not only taught me about mechanics, but also a valuable safety lesson. Yes, there have been plenty of accidents, with the common thread being that I identified the hazard but ignored it instead of taking a different approach or putting appropriate control measures in place.

The first safety lesson I learned the "hard way" was one we've all heard a million times — use the right tool for the job. My faithful '58 Chevy had a worn-out and tired front end, so I decided to tear it down and do a complete rebuild. I knew the front coil springs were under a lot of pressure and that there was a tool used to compress them for safe removal. Instead of using that tool, I decided to use a bottle jack under the control arm to release the pressure slowly. I knew this was the wrong way to do the job and that I was taking a chance, but I went through with it anyway.

Sure enough, as soon as I loosened the last bolt from the control arm, the pressure caused the jack to shift. The compressed spring then flew out, hit me in the chest and knocked me back about three feet. As I lay there on the ground looking at the impressions the spring left on my chest, I said to myself, "You knew that was going to happen." Nowadays, no one has an excuse not to use the right tool for the job. In fact, most of the major auto parts chains have a free loaner program that covers just about any tool you would need to do a job right.

Over the years, I've also suffered countless eye injuries because of my hobby. The one thing they all had in common was right before the injury occurred, the thought went through my mind that I should be wearing safety glasses. Of course, that did little to prevent the piece of metal from flying off the back of the Honda Civic I was grinding on and going straight into my eye. That mishap ended with a trip to the emergency room, where the doctor numbed my eye so he could remove the metal.

I'm embarrassed to say that this encounter happened after several other incidents where some type of foreign substance ended up in my eye, including brake fluid, carburetor cleaner and just about anything else that can be sprayed. Fortunately for me, my wife has come to expect the occasional mishap and knows exactly what to do when I come running in the house with one eye covered. Somehow, though, I'm always surprised when it happens.

Not surprisingly, there have been numerous other close calls, including a vehicle without wheels falling onto the ground, the loss of two wheels on two separate vehicles while driving down the road and, most recently, a differential from a minivan falling onto my head. All of these incidents had three things in common: I identified the hazard, ignored it and serious consequences could have occurred but, thankfully, didn't.

As an Army, we do a good job of being safety conscience in our motor pools. But we must remember to bring those safe practices to our home shops as well. Whether the accident happens at home or the motor pool, the consequence is the same — the loss of a Soldier.

MY SON'S FATHER

STEVEN ANDERSON
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Compared to many other safety directors/managers/officers, I have not "officially" been in the business very long. But I have learned a few things over the years.

After being medically grounded in August 1999, I put in a request to attend the Aviation Safety Officer course. That request was granted, and after being in the standardization realm throughout my aviation career, I soon found myself a chief warrant officer 5 fresh out of the ASO course going to a division safety office. I say I haven't officially been in the safety business very long because I always felt that bad things could happen to me, so I took measures to reduce the chance they would. If you got onboard my aircraft and wanted a yank-and-bank fun ride, you were out of luck.

An aviator doesn't fly for 20 years without experiencing close calls. As with so many others, I have had several good friends who were killed while flying. All were on training missions, minus one who was shot down over El Salvador. So why were my incidents only close calls and they died? My philosophy about flying was that I refused to have my son grow up without a father.

It didn't matter who was onboard, the most important person on that aircraft was my son's father. If my son's father made it back safely, then so did everyone else. To me, hoping nothing happened was not an option. I owed it to my son to actively pursue ways to reduce risk. Flying Army helicopters is a dangerous business. Why would anyone do something to increase that danger?

There are several different sayings about safety such as "Safety first!" and "Mission first, safety always!" They may brief well, but too often they're just words. Safety gets a lot of north and south nods, but I see a lot commanders and leaders not investing personal interest and being actively involved in "their" safety program.

One thing I have learned is that a commander's safety program will not be effective if the noncommissioned officers do not buy into and support it. Safety officers must work with the NCOs and ensure they have the tools they need to set the example and enforce standards. The best safety program in the Army may produce a fatality while the worst safety program doesn't. Odds are, however, the unit with a proactive safety program — NCOs holding Soldiers to standards and commanders actively involved with the safety of their Soldiers — will have fewer accidents, higher moral and better unit cohesion. You don't have to go through official safety training to know if something is unsafe. A good rule of thumb is if it looks wrong, it probably is.

I have had senior officers tell me they just witnessed Soldiers performing unsafe acts and I needed to do something about it. When asked what they did to correct the unsafe acts, I have been told three times, "That's your job." While that may be true, we all need to do our part to keep each other out of harm's way. Hoping something doesn't happen is not an effective, viable safety plan. We owe it to the parents, spouses, children and siblings to do everything we can to keep their Soldiers as safe as possible so they go home unharmed.

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TORNADO PREPAREDNESS

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Emergency management is one of the most challenging tasks for individuals and organizations and cannot be overlooked. Thinking ahead could mean the difference between life and death. Your safety, as well as that of your family members, co-workers and Soldiers, depends on weather preparedness.

Summer is here, and along with it comes another push by emergency management professionals to prepare for hazards associated with warm weather. Hazards vary throughout the country, but there's one that can happen anywhere at any time — a tornado.

Tornadoes are nature's most violent and deadly storms. With wind speeds up to 300 mph and paths of destruction stretching as much as mile wide and 50 miles long, tornadoes can cause fatalities and demolish neighborhoods. While some of these storms are clearly visible, rain or low-hanging clouds can mask others.

I'd like stress the importance of preparedness, which can be tricky because of the suddenness and inability to predict exactly where a tornado will strike. Although they don't have a particular season, they do have periods where occurrences peak. It largely depends on the part of the country — almost by state — when they have the best chance to develop and strike. Advanced notice for tornadoes has improved, but the National Weather Service can only predict where one may strike within a 15-minute window. Therefore, it's important everyone is prepared.

Before a Tornado

- Identify a place in your home (a safe room) to take shelter in case of a tornado. The time to identify this location is now. Have frequent tornado drills to practice going to the safe room. A storm shelter or basement provides the best protection. Otherwise, choose an interior room or hallway on the lowest floor possible.

- Get a weather radio. Make sure it can store a charge or can be hand-cranked.

- Watch for the following danger signs in an approaching storm and be prepared to take shelter immediately:
  ~ Dark, often greenish sky
  ~ Large hail
  ~ A large, dark, low-lying cloud (particularly if rotating)
  ~ Loud roar, similar to a freight train

- Know the terms and verbiage associated with any weather event. Familiarize yourself with these terms to help identify a tornado hazard.

- Remain alert for approaching storms. Listen to NOAA Weather Radio or commercial radio or television newscasts for the latest information. In any emergency, always listen to the instructions given by local emergency management officials.

During a Tornado

- If a tornado has been spotted or indicated by weather radar, take shelter immediately in the designated safe room. If you are outside, find shelter immediately. If shelter is unavailable, lie flat in a ditch or low-lying area. If in a vehicle, stop immediately and find shelter. Do not try to outrun or drive through a tornado.

- Stay tuned to radio or TV for information and instructions as they become available and stay in the shelter until the tornado has passed.

After a Tornado

- Injury may result from the direct impact of a tornado or may occur afterward when people walk among debris and enter damaged buildings. Check for injuries. Do not attempt to move seriously injured people unless they are in immediate danger of further harm. Stay clear of downed power lines and out of damaged areas. Inspect your home for damage, but be careful of unseen hazards.

- Stay tuned to the radio or TV for further information or instructions.

- Prepare now for a tornado. It may never happen in your area, but if it does, you will be ready if you follow the basic guidelines above. Know the terms for watches and warnings (see info box below) and what to do to protect your family. Remember, prepare, practice and be ready now.

FYI

- Tornado Watch — Atmospheric conditions are favorable for the development of severe thunderstorms capable of producing tornadoes

- Tornado Warning — A severe thunderstorm has developed and has either produced a tornado or radar has indicated intense low-level rotation in the presence of atmospheric conditions conducive to tornado development

Source: National Weather Service

FYI

Ready Army is the Army's proactive campaign to increase the resilience of the Army community and enhance the readiness of the force by informing Soldiers, their Families, Army Civilians and contractors of relevant hazards and encouraging them to Build a Kit, Make a Plan and be informed. Through outreach and education, ***Ready Army*** calls our Army community to action and aims to create a culture of preparedness that will save lives and strengthen the nation. To learn more, visit http://www.acsim.army.mil/readyarmy/.

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WHO NEEDS PPE?

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Who needs personal protective equipment? Not me … at least that's what I used to think.

When I was 8 years old, my best friend got a mini-bike for his birthday. I immediately wanted one too. Unfortunately, my mom and dad were just like all the adults in the movie "A Christmas Story." But rather than, "You'll shoot your eye out," all I heard was, "You'll kill yourself."

Years went by and I never got my mini-bike. Once I got married, though, I thought I'd revisit the idea and buy a motorcycle. But now it was my wife (the paramedic) who protested, saying, "No way! Someone won't see you and you'll get killed." For the record, I always thought that argument was a little weak since my job was being a Marine. But still, I didn't get a bike.

Fast forward 20 or so years and retirement was finally on the horizon. So what did I do? Well, I did what any 44-year-old retiring Marine does — I went out and bought a motorcycle! I wanted to do it right, though, so I went through all the rider training, heard all the stories — from the instructors and my wife — and served as a ground safety officer for several different units in the Marine Corps.

I started slowly, at first only riding in my neighborhood. I eventually progressed to riding to work, and then participating in group rides with the guys on the weekends. With each new level, I further built up the "motorcycles-aren't-that-dangerous" mentality. As I continued to increase my learning, the "it-won't-happen-to-me" attitude also started rearing its ugly head.

During this time, the Marine Corps was going back and forth on various motorcycle polices, including whether we should be required to wear a riding jacket or just a long-sleeved shirt. The final decision was that a long-sleeved shirt would suffice. Since retiring, I'd worn short-sleeved shirts to work as a contractor on base, but I had to comply with the regulations. Since North Carolina summer mornings can be hot and muggy, I bought a very thin long-sleeved running-type shirt that would satisfy the requirement without causing me to overheat. I figured I could always take off the shirt once I got to work. By now, I had gotten so comfortable with my abilities, I was also wearing sneakers, and sometimes shorts, on weekend rides.

One evening while coming home from work, a young girl turned right on red without stopping just as I was turning left against traffic. I collided with her vehicle and was thrown to the ground, my bike landing on top of me. Once paramedics arrived, I was taken to the hospital for treatment. Fortunately, my only injury was a severe case of road rash on my arm.

What saved me from further injuries was the fact that I had just left work. I was wearing safety boots, not as PPE for riding, but as a requirement for my job. I was also wearing gloves because I hadn't had a chance to take them off since leaving the installation. North Carolina has a helmet law, so my head was protected, which is more than I can say for my arm. The thin long-sleeved shirt I was wearing offered little protection from the asphalt, hence the road rash.

So I ask again, "Who needs PPE?" Well, for one, this ol' retired Marine. And you do too! I hope this will be a lesson that it can happen to you. The old adage "Dress for the slide, not the ride" is now "tattooed" on my arm. It was a painful lesson I won't soon forget. Keep the shiny side up!

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DON'T MESS WITH MOTHER NATURE

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It was midsummer in Iraq, and I was a young pilot on a night vision goggle flight. My mind, however, was on my upcoming environmental leave, which was to start the next day.

Our aircraft was lead in a flight of two UH-60Ls during a regular battlefield circulation which was to last just under the limit of our set max NVG flying time of six hours. My pilot in command was the company's senior maintenance test pilot who was not accustomed to flying with NVG and/or instruments. He was on the schedule that evening for a goggle reset flight so he would not lose his NVG currency.

Our unit had been in country for nine months of a 15-month deployment. It was my very first deployment as an aviator, and, at that point, I had accumulated a total of 350 hours, of which, about 200 were on NVG. The PC's experience included a prior deployment to Iraq, with about 1,000 flight hours, 250 of those under goggles.

The weather was questionable at best. We had a window of opportunity to launch from Contingency Operating Base Speicher, our home base, to the Baghdad area to conduct our mission. The recovery weather we received prior to departure was not looking good. It read: "Departure 3½ miles with dust clear skies." En route, they gave us four miles, at best, to the south, and for recovery, a half-mile visibility with dust due to a shamal that was moving east to our area of operation during our recovery period.

There was no illumination for our time period, and the moon was scheduled to rise after our mission was complete. The weather briefers advised us not to recover during that time, but if we had to, recover just 30 minutes prior because we had a very good chance of missing the bad weather.

I know what you're thinking by now: Army Regulation 95-1 states, "Destination weather must be forecast to be equal to or greater than visual flight rules minimums at estimated time of arrival through one hour after ETA," so we shouldn't have even launched because we didn't have good recovery weather. However, our battalion commander's philosophy was to launch regardless if you had recovery weather. He expected his crews to launch if they had a legal "launch" weather brief and attempt to accomplish the entire mission, part of it or at least give it a fair try.

We managed to launch with a mutual understanding that we'd speed up during the long legs of the flight, minimize time on the ground by having a set plan at each stop and expedite refueling at any forward arming and refueling point in an attempt to recover before the shamal arrived at the forward operating base. We were able to cut down our flight time and started to head home. We decided to pull maximum range for the last leg of the flight, which was about 135 knots indicated airspeed. As we approached the 10-nautical-mile veil of the Class C airspace, the tower informed us that the field was instrument flight rules (2¼ miles visibility and dropping rapidly) and for us to state our intentions. We requested a special VFR clearance to complete our recovery, and it was granted with no issues.

The visibility was without a doubt right at two miles, and by that time, we were about three miles outside the COB. We did not have the gas to turn around and recover at another location because of the remote location of COB Speicher. We decided to push on.

At one mile out, the shamal hit and we lost most of our visibility with the ground. The PC was on the controls at the time and became spatially disoriented, yanking aft on the cyclic and causing us to lose airspeed and climb. We were flying at about 500 feet above ground level and quickly climbed to 1,400 feet. I got on the controls and asked him what he was doing. He said he was suffering from spatial disorientation, so I took the controls, regained airspeed and leveled the aircraft. Suddenly, he said he had visual contact with the ground, grabbed the controls and dove. We entered an accelerated descent and quickly lost about 1,200 feet AGL. The second aircraft in the flight followed us through the maneuver, and the entire flight managed to land safely at the COB.

The lessons learned from this incident included "get-home-itis" syndrome. The fact that both the PI and PC were going on environmental leave the next morning only added fuel to the fire. Never push weather. We knew the weather was going to turn bad, yet we decided to continue through with the return flight. In situations like this, crew coordination becomes essential in the safety of the flight and crew. Not one person in the flight announced their intentions and simply took action without announcing it. This, and others situations I have encountered in my career as an Army aviator, have sharpened my intuitions and have made me a better pilot.

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FOCUS ON THE CAN, NOT THE CAN'T

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There is a great deal of controversy surrounding Public Law 111-383, more commonly referred to as the National Defense Authorization Act for Fiscal Year 2011, or NDAA, among many Army commanders and leaders. Much of the controversy, however, is rooted in misperception.

At issue is Section 1062 of the law, concerning: "Prohibition of infringing on the individual right to lawfully acquire, possess, own, carry, and otherwise use privately owned firearms, ammunition, and other weapons." This section of the law, which is intended to protect the Second Amendment rights of service members, has been interpreted by many leaders to mean that they can no longer talk to their Soldiers about privately owned weapons.

At the heart of the issue is that the law states "in general" that the secretary of defense (and subsequently subordinate commanders and leaders), "… shall not prohibit, issue any requirement relating to, or collect or record any information relating to the otherwise lawful acquisition, possession, ownership, carrying, or other use of a privately owned firearm, privately owned ammunition, or another privately owned weapon by a member of the Armed forces ..."

The law does provide exceptions in the general rule for military installations and other properties owned or operated by the Department of Defense. Additionally, the law provides exceptions for situations such as the belief that a Soldier presents a threat to himself or others. Congress amended the law in the 2013 NDAA to clarify the threat exemption, and ALARACT 063/2013, Control and Reporting of Privately Owned Weapons, provides further guidance.

So essentially, what the law does state is that under normal conditions, you can only inquire about or collect information on privately owned weapons brought onto a military owned or operated property or installation. However, what the law does not do in any shape or form is prohibit you from discussing the safe handling of privately owned weapons with your Soldiers.

Not only can you discuss privately owned weapons with your Soldiers, you should talk about this issue, as well as the safe handling of military weapons. In the five-year period from fiscal 2008 through 2012, 29 Soldiers lost their lives as a result of accidents involving the discharge of a firearm, while another 160 non-fatal injuries were reported. Eighteen of the 29 fatalities occurred off duty with a privately owned weapon; the other 11 occurred on duty with military weapons. (Statistics are as of October 2012).

The basic tenets of safe weapons handling apply to all weapons regardless who owns them. For starters, we don't hand new recruits an M-4 and expect them to operate it safely without training. We also don't assume that once they have qualified with an M-4 that they are qualified to operate a .50-caliber machine gun. Therefore, you, in addition to your Soldiers, should never assume that because you are an expert with an M-4 that you are an expert with all weapons.

While you can't order a Soldier to participate in training with their privately owned weapons, you can recommend and provide information on privately owned weapons training available in your local area or consider offering a voluntary basic weapons safety class, as Fort Sill is currently doing. You can also mandate that all of your Soldiers attend safety classes covering privately owned weapons.

Privately owned weapons classes should stress the need to know appropriate laws, regulations and procedures for the transport, storage and registration of weapons, as they vary among states, localities and military installations. The classes should also stress never mixing weapons and alcohol. The majority of fatal accidents involving privately owned weapons have also involved alcohol. Most importantly, anyone handling any type of firearm needs to THINK weapons safety:

Treat every weapon as if it is loaded.
Handle every weapon with care.
Identify the target before you fire.
Never point the muzzle at anything you do not intend to shoot.
Keep the weapon on safe and your finger off the trigger until you intend to fire.

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ARMY STRONG.
U.S. ARMY COMBAT READINESS/SAFETY CENTER

For more information on safe weapons handling, check out the Range & Weapons Safety Toolbox at https://safety.army.mil/rangeweaponssafety. The toolbox includes a section dedicated to privately owned weapons, which contains a copy of ALARACT 063/2013, along with safety messages, presentations, videos, posters and links to other tools and resources.

Remember to focus on what you can do. A very wise first sergeant once told me that if you aren't listening, you aren't leading. From personal experience, I know that if you truly listen to your Soldiers, there is very little they won't tell you, to include their recent purchase of an awesome weapon. No, you can't record that information, but you can use the opportunity to share some safety tips.

GONE WITH THE WIND

DAVID L. HOUGH
http://www.soundrider.com

Cruiser Carla finally saved up enough vacation time to take that big cross-country trip, and today she is heading west on Interstate 90 across South Dakota. Last night, there was something on television about high winds across the plains, but she was too tired from yesterday's ride to get the message. This morning, the breeze is kicking up little whirlwinds in the parking lot, but the sun is warming up the air, and it looks like another good day to lean back in the saddle and motor off toward the horizon.

Carla likes the feel of her cruiser. The low seat allows her to reach the ground with both feet. She has added a big windshield on the front and highway pegs so she can stretch her feet forward. She doesn't like the appearance of hard bags, so her gear is stacked up on the back of the saddle.

For the first hour, there are a few disconcerting wind gusts, but the sky is blue, the cruiser is thrumming along sweetly and Carla continues to enjoy the freedom of the road. She takes a break at Mitchell to see the famous Corn Palace, but when she comes out to saddle up again, she realizes the blue sky is rapidly disappearing behind a wedge of swirling black clouds.

Back on the superslab, the wind has shifted around to the southwest, and the gusts are getting stronger and more frequent, slamming into the bike from the left front. Carla can barely hang on. The leather fringe on her jacket whips against her exposed neck. The wind keeps tugging at her half helmet, and grit blows into her eyes behind her sunglasses.

Crossing the bridge at Chamberlain, a nasty gust suddenly hammers into the bike, slowing and pushing it toward the railing. Carla's heart jumps into her throat as she struggles to steer the bike away from the railing. Then, as the gust suddenly passes, the bike swerves left and Carla is barely able to keep it out of the oncoming lane.

For the next 100 miles, she can't shake the images of a bike and rider cartwheeling off the bridge into the Missouri River or slamming head-on into an 18-wheeler. The ride has ceased to be fun, but Carla forges ahead into the prairie winds, refusing to delay her schedule. By the time she has battled her way to Wall, she is exhausted, flayed, windburned, dehydrated, scared and angry. To top off her frustration, the engine sputtered onto reserve 20 miles back. And when she dismounts at the gas station, a gust slams into the bike and pushes it over before she can catch it.

"Dang wind!" Carla screams. "I hate the wind!"

Most of us can empathize with Carla. Motorcycles can be tricky to control in crosswinds, especially gusting crosswinds. We try to keep the motorcycle balanced, but the gusts suddenly slam it sideways and then, just as suddenly, let up. It's a constant battle to stay between the lines. Is there some method to riding in this windy madness, or do we just have to tough it out?

Sometimes riders contribute to the problem without realizing it. The fringe on Carla's riding jacket is stylish, but it flails around in the wind, adding to the annoyance. Her half-helmet and sunglasses are cool looking, but they can't keep the wind and grit out of her eyes. The forward-mounted highway pegs make steering more cumbersome and strain her back and shoulder muscles. Stacking her gear up on the back of the saddle is handy, but that also creates a "sail" high above the rear wheel. Let's consider how different motorcycles react to wind, and how the motorcycle/rider ergonomics relate to ease of control.

Sails

A bike with lots of sail (for example, a tall windshield or large fairing) is more susceptible to crosswinds. The shape and location of the sails is just as important as the size. Remember, a motorcycle tends to roll (lean) around its center of mass (center of gravity). A crosswind pushing on the area below the center of gravity has less effect because it's being resisted by tire traction. But wind blowing on the sail above the center of gravity is more able to push over the bike.

We should expect that wind pressure on a frame-mounted windshield or fairing would push the bike downwind. What's not so obvious is that sails mounted on the front fork will apply a steering force to the front wheel. Steering forces the bike to lean, whether it is our hands pushing on the grips or the wind pushing on the front fender. The relative position and shape of sails attached to the front fork, including fenders, fairings and windshields, will have an effect on how the bike handles in windy conditions.

For example, a large handlebar-mounted windshield leaning back behind the steering axis might be more stable in calm air, but will steer the machine into more of a downwind lean in a side gust. A front fender with more sail ahead of the steering axis might actually steer the machine upwind during a gust. Steering will be more neutral if a handlebar-mounted windshield is mounted in line with the steering axis.

A bare bike can theoretically be as stable as a faired machine, except that the wind tugging at the rider's arms will impart some unintentional steering input. For instance, a strong gust from your right will push your elbows toward the left, countersteering the bike into even more of a left lean. Saddlebags mounted no higher than the machine's center of gravity will be less likely to push the bike downwind. Bulky sails such as a sleeping bag strapped up high or a duffle cantilevered over the taillight can cause strange steering. A large, boxy tail trunk (top box) is handy for carrying extra gear, but the combination of tail trunk and a passenger creates a large sail high up on the bike and far from the center of gravity.

Ergonomics

The way you sit on the machine and reach for the controls (the ergonomics) also has a dramatic effect on how well you are able to control the machine. For best control in difficult conditions, the rider should be seated on the saddle with their torso leaning slightly forward, arms slightly bent at the elbows and hands grasping the handlebar grips at a comfortable angle. Footrests located beneath the rider's center of gravity make it easier to brace against the tank and shift body weight from one peg to the other.

What's not so obvious is that when you push on the handlebar grips, you use your legs to brace yourself. Cruiser-styled machines with forward-mounted foot pegs and high handlebars may look cool, but the ergonomics are far from ideal for steering a motorcycle. Sports bikes provide more accurate steering control, but the lean-forward position can quickly strain shoulder and neck muscles. So, ergonomics are always a compromise between control and comfort.

Consider that the ergonomics determine which muscles are used to lean the bike. Quick, powerful steering inputs require quick, powerful muscles, like those in your arms. To understand this concept, lean your torso forward in your chair with your feet flat on the floor. Stretch both arms straight forward as if you were reaching for some imaginary forward-mounted handlebars. Reach out far enough that your elbows are locked straight. Now, turn your imaginary handlebars a little to the left, and then a little toward the right and think about which muscles are doing the work. With your arms locked straight, you must use your back muscles, right? And when you're pushing with your shoulder muscles, you're probably bracing with your legs, too.

Now, pull your imaginary handlebars back toward you just enough that your elbows are bent slightly, and try steering left-right again. With your arms bent, you can steer with your arm muscles, which happen to be quicker and more accurate than the larger muscles in your shoulders, back, buttocks or legs.

Rider Skill

Even if the machinery, loading and ergonomics are perfect, a rider's balancing/steering technique has a lot to do with accurate control. Riders who consciously countersteer have better control and less frustration in windy situations than riders who merely think "lean," or who try to steer by shifting body weight. Countersteering is momentarily steering the front wheel opposite the direction you want the bike to lean. That is, to lean the bike right, you would steer the front wheel to the left. So, to lean right, press on the right grip. To lean left, press on the left grip.

When riding through strong winds, you must lean the bike into the wind, and that may require forceful pushing on the grip. For example, with a strong but steady crosswind from your left, pushing on the left grip will lean the bike left (upwind). If the bike drifts too far downwind, you need to lean it even more toward the wind. Pushing a little harder on the upwind grip will lean it over more and point back toward your desired line. Of course, when the wind suddenly decreases or changes direction, you will need to quickly countersteer to whatever angle is needed to keep the bike within the lane.

When riding through crosswinds, you may get some strange feedback from the front wheel. It may require more pressure on the grip than during a curve, since the contact patches are way over on one side of the tires even though the machine is traveling straight ahead. Just concentrate on countersteering to make the motorcycle go in whatever direction you wish and let the tires swerve around under you. Many of us have ridden for miles through strong crosswinds with the bike leaning over at a startling angle, controlled by firm pressure on the upwind grip.

Gusting Crosswinds

The most difficult situation is with strong gusting winds. Suddenly a gust slams into the bike, pushing it off on a tangent toward the shoulder or into the opposing lane. What's needed to counteract gusts is to get the bike leaned over quickly into the wind. And the way to lean a bike quickly is to countersteer forcefully, the same tactic you'd use to initiate a quick swerve around a pothole. If the gust increases, just push a little harder, but be prepared to push hard on the other grip to straighten up again as the gust passes.

Be aware of the tendency to counteract one hand with the other. When you're pushing hard on the left grip, you may be stiff-arming the right grip without realizing it and wondering why you can't get the bike leaned quickly. So, when countersteering, try to focus your energy on one grip, and relax your other arm. In other words, to lean the bike toward the right, push with your right hand and relax your left arm.

Since we can't see the air, it helps to have some understanding of what wind does around other vehicles and structures. Oncoming trucks can push a powerful "bow wave" toward you, or the wind may swirl around behind the trailer. Be especially wary of large vehicles approaching from upwind, and move as far away as possible to avoid the blasts. When you're about to exit a tunnel or cut between two hills, be prepared to countersteer into a sudden gust.

We might also note that Carla's wind troubles grew worse toward afternoon. That's because wind typically gets stronger and more turbulent as the earth warms up. There are many locations in North America where a strong wind is expected every summer afternoon. For example, in the Columbia River Gorge between Oregon and Washington, the cool coastal air rushes inland to replace the hot air rising over the deserts. For the wind surfers, it's heaven. For motorcyclists, it's less fun. In such locations, wise riders make the trip earlier in the morning, before the afternoon wind kicks up.

Body Armor

Armored gear is an important precaution for windy conditions. But gear that helps you avoid fatigue, irritation, headaches or frustration will help you avoid accidents. Wear sensible riding gear that covers all skin and keep everything zipped and buttoned closed. It's very important to wear your earplugs because the wind velocity when riding into the wind generates noise levels way up into the injury range. That headache at the end of the day may be a result of wind noise. Most importantly, wear eye protection that keeps windblown grit out of your eyes.

Know When to Fold 'em

You don't have to like wind, but you can gain the confidence that comes from knowing you can control the bike under most wind conditions. We mention most, because sometimes winds are so violent that it's unwise to continue riding. I can recall dropping down off a pass in eastern Oregon early one spring to find myself headed straight toward a sinister silver-streaked cloud moving across the valley ahead. I didn't understand what I was seeing until the sleet squall hammered into the bike. Suddenly, I was about to lose control, the bike being pushed so hard sideways the tires were beginning to slide.

I made a quick downwind U-turn, sped back to a road maintenance area I had just passed, laid the bike on its side in the lee of a gravel pile and hunkered down until the squall moved on. In the tornado alley between Texas and the Great Lakes, motorcyclists must be aware of the extreme hazard of twisters. If there is a tornado alert, consider delaying your trip or changing the route to ride around the area. If you do head out and find yourself in the path of a tornado, take evasive action immediately. If you have no other place to hide from an approaching tornado, tuck yourself under a highway overpass or into a drainage culvert. Don't waste any time trying to protect your bike.

Homework

The homework exercise for gusting winds is to practice countersteering (push steering) all the time as you ride along. Approaching a curve to the right, consciously push on the right grip to lean the bike. Changing lanes toward the left, push on the left grip. Or, if the ergonomics of your machine have you leaning back and pulling on the handlebars as you ride along, try pulling both grips toward the direction you want to go. For a right turn, pull both grips toward the right. If you practice countersteering every time you ride, you'll lean the bike into sudden wind gusts without having to think about it.

KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

ACCIDENT BRIEFS

AVIATION

AH-64D
Class A
Both pilots died when their aircraft struck the ground. The accident is under investigation.

GROUND

AMV
Class A
A Soldier was killed when the HMMWV he was riding in overturned. He was not wearing a seat belt.

PERSONNEL INJURY

Class A
A Soldier died after being shot by a privately owned weapon. The Soldier, who lived in an apartment with two other Soldiers, was seeking safety from a civilian intruder. When the Soldier entered a room, he was mistaken as the intruder and shot by another Soldier.

A Soldier drowned during an overnight fishing trip.

Class B
A Soldier's finger was amputated after his ring got caught on a metal ladder while dismounting a HMMWV.

DRIVING

PMV-4
Class A
A Soldier died when his vehicle left the road, overturned and collided with two other vehicles.

PMV-2
Class A
A Soldier died after he lost control of his motorcycle at a high rate of speed, left the road, went airborne and struck an embankment.

A Soldier suffered a permanent disability injury when his motorcycle struck a pickup truck that entered his lane.